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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,328	07/23/2003	Sebastien Weitbruch	PD020074	7767

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EXAMINER	
BRAUTIGAM, ALYSA N	
ART UNIT	**PAPER NUMBER**
2676	

DATE MAILED: 10/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/625,328	WEITBRUCH ET AL.	
	Examiner	Art Unit	
	Alysa N. Brautigam	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 August 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 August 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 5 August 2005 have been fully considered but they are not persuasive. In particular, the point of argument rests on the statement, "changing at least one of the phase, amplitude, spatial resolution and temporal resolution of said dithering function in accordance with said at least one motion vector when applying said dithering function to said video data." Applicant points out that Lin fails to disclose this limitation, a position further reflected in the Office Action dated 5 April 2005. Applicant goes on to state that Mikoshiba fails to remedy this deficiency because Mikoshiba discloses a "differing (not dithering) unit for differing (not dithering) the display position of the half-tone image from sub-frame to sub-frame in the first frame according to the motion vector." Applicant further states, "Mikoshiba merely changes a display position according to motion vectors" and "fails to teach, or suggest 'changing at least one of the phase, amplitude, spatial resolution and temporal resolution of said dithering function in accordance with said at least one motion vector when applying said dithering function to said video data.'"

2. In the art, it is generally understood that a common technique of halftoning is dithering (clustered-dot ordered dither). Mikoshiba clearly discloses a halftoning function and the halftone function is changed in accordance with the temporal resolution (columns 3 and 4). Arguably, it could also be said that the change of "display position according to motion vectors" is a change in spatial resolution.

Drawings

3. Applicant's amendments, see replacement drawing sheet and amendments to the specification, filed 5 August 2005, with respect to Figure 4 have been fully considered and are persuasive. The objection of the discussion of Figure 4 has been withdrawn.

Specification

4. Applicant's amendments, see pages 2-4, filed 5 August 2005, with respect to the following have been fully considered and are persuasive.

- Abstract - References to figures
- Abstract - Language
- Page 2, lines 19-21
- Page 2, line 35
- Page 3, lines 1, 2, 4, 6-8
- Page 3, lines 28-29
- Page 7, line 26
- Page 11, lines 28-30

The objections to the abstract and specification have been withdrawn.

Claim Objections

5. Applicant's amendments, see pages 5-6, filed 5 August 2005, with respect to claims 1 and 8 have been fully considered and are persuasive. The objections to claims 1 and 8 have been withdrawn.

Claim Rejections - 35 USC § 112

6. Applicant's argument, see page 10, filed 5 August 2005, with respect to claim 16 has been fully considered and is persuasive. The 35 USC § 112 Rejection of claim 16 has been withdrawn.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1-2, 6-7, 8-9, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (6,421,466) in view of Mikoshiba et al. (5,907,316).

9. In regards to claim 1, Lin discloses a method for processing video data (abstract; column 6, lines 26-31) for display on a display device having a plurality of luminous elements (column 5, lines 61-64 disclose the display as having luminous elements) by applying a dithering function to at least part of said video data to refine the grey scale portrayal of video pictures of said video data (col. 8, lines 18-23), said method

comprising the steps of computing at least one motion vector from said video data (col. 6, line 40 through col. 17 disclose the details of the motion vector computation). While Lin clearly discloses using the motion vector computation from said video data and Lin further discloses dithering of the motion vector, Lin does not specifically disclose wherein the phase, amplitude, spatial and/or temporal resolution of the dithering function change in accordance with the motion vector. Mikoshiba et al. discloses a method and apparatus for displaying half-tone [dithered] images wherein the spatial resolution of said dithering function is changed in accordance with said at least one motion vector when applying the dithering function to said video data (col. 2, line 60 through col. 3, line 5 disclose the spatial change; col. 3, lines 26-38 disclose the temporal changes). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin and Mikoshiba to achieve a system and method for processing video data for display wherein a motion vector is computed and used to change the spatial and/or temporal resolution of the video in order to provide a method of displaying dynamic dithered [half-toned] images without disturbance and deteriorated display quality.

10. In regards to claim 2, the combination of Lin and Mikoshiba disclose the method according to claim 1, as contained hereinabove. In addition, the combination discloses wherein said dithering function includes two spatial dimensions and one temporal dimension (Fig 12A; col. 11, line 6 through col. 12, line 67 disclose the calculation wherein the x and y coordinates are the spatial dimensions and the frame-to-frame is the temporal dimension; see also col. 3, lines 39-50). It would have been obvious to

one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin and Mikoshiba to achieve a system and method for processing video data for display wherein a motion vector is computed and used to change the spatial and/or temporal resolution of the video in order to provide a method of displaying dynamic dithered [half-toned] images without disturbance and deteriorated display quality.

11. In regards to claim 6, the combination of Lin and Mikoshiba disclose the method according to claim 1, as contained hereinabove. In addition, Lin discloses wherein said at least one motion vector is defined for each pixel or cell individually (col. 6, line 40 through col. 7, line 17 disclose the details of the motion vector computation for each pixel).

12. In regards to claim 7, the combination of Lin and Mikoshiba disclose the method according to claim 1, as contained hereinabove. In addition, the combination discloses wherein said at least one motion vector has two spatial dimensions (Mikoshiba: Figures 10 and 11; col. 11, lines 31-59). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin and Mikoshiba to achieve a system and method for processing video data for display wherein a motion vector is computed and used to change the spatial and/or temporal resolution of the video in order to provide a method of displaying dynamic dithered [half-toned] images without disturbance and deteriorated display quality.

13. In regards to claim 8, Lin discloses a device for processing video data (abstract; column 6, lines 26-31) for display on a display device having a plurality of luminous

elements (column 5, lines 61-64 disclose the display as having luminous elements) including dithering means (col. 8, lines 18-23) for applying a dithering function to at least a part of said video data refine the grey scale portrayal of video pictures of said video data, wherein, it comprises motion estimations means connected to said dithering means (col. 6, line 40 through col. 17 disclose the details of the motion vector computation). While Lin clearly discloses using the motion vector computation from said video data and Lin further discloses dithering of the motion vector, Lin does not specifically disclose wherein the phase, amplitude, spatial and/or temporal resolution of the dithering function change in accordance with the motion vector. Mikoshiba et al. discloses a method and apparatus for displaying half-tone [dithered] images wherein the spatial resolution of said dithering function is changed in accordance with said at least one motion vector when applying the dithering function to said video data (col. 2, line 60 through col. 3, line 5 disclose the spatial change; col. 3, lines 26-38 disclose the temporal changes). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin and Mikoshiba to achieve a system and method for processing video data for display wherein a motion vector is computed and used to change the spatial and/or temporal resolution of the video in order to provide a method of displaying dynamic dithered [half-toned] images without disturbance and deteriorated display quality.

14. In regards to claim 9, the combination of Lin and Mikoshiba disclose the device according to claim 8, as contained hereinabove. In addition, the combination discloses wherein said dithering function used by said dithering means including two spatial

dimensions and a temporal dimension (Fig 12A; col. 11, line 6 through col. 12, line 67 disclose the calculation wherein the x and y coordinates are the spatial dimensions and the frame-to-frame is the temporal dimension; see also col. 3, lines 39-50). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin and Mikoshiba to achieve a system and method for processing video data for display wherein a motion vector is computed and used to change the spatial and/or temporal resolution of the video in order to provide a method of displaying dynamic dithered [half-toned] images without disturbance and deteriorated display quality.

15. In regards to claim 13, the combination of Lin and Mikoshiba disclose the device according to claim 8, as contained hereinabove. In addition, Lin discloses wherein said at least one motion vector is definable for each pixel individually by said motion estimation means (col. 6, line 40 through col. col. 7, line 17 disclose the details of the motion vector computation for each pixel by the motion estimation means).

16. In regards to claim 14, the combination of Lin and Mikoshiba disclose the device according to claim 8, as contained hereinabove. In addition, the combination discloses wherein said at least one motion vector includes two spatial dimensions (Mikoshiba: Figures 10 and 11; col. 11, lines 31-59). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin and Mikoshiba to achieve a system and method for processing video data for display wherein a motion vector is computed and used to change the spatial and/or

temporal resolution of the video in order to provide a method of displaying dynamic dithered [half-toned] images without disturbance and deteriorated display quality.

17. Claims 3-5, 10-12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin (6,421,466) in view of Mikoshiba et al. (5,907,316) and in further view of Correa et al. (European Patent Application: EP1136974 A1).

18. In regards to claim 3, the combination of Lin and Mikoshiba discloses the method according to claim 1. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein the dithering function includes the application of a plurality of masks. Correa discloses a method for processing video data for display on a display device wherein dithering is applied and the dithering function includes the application of a plurality of masks (page 9, paragraph 0038). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

19. In regards to claim 4, the combination of Lin and Mikoshiba discloses the method according to claim 1. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein said applying of said dithering function is based on single luminous elements called cells of said display device. Correa discloses a system and method for processing video data for display on a display device wherein said applying of said dithering function is based on

single luminous elements called cells of said display device (page 2, paragraph 0011; page 3, paragraph 0012). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

20. In regards to claim 5, the combination of Lin and Mikoshiba discloses the method according to claim 1. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein said dithering is a 1-, 2-, 3-, and/or 4-bit dithering function. Correa discloses a method for processing video data for display on a display device wherein said dithering is a 1-, 2-, 3-, and/or 4-bit dithering function (page 9, paragraph 0038). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

21. In regards to claim 10, the combination of Lin and Mikoshiba discloses the device according to claim 8. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein the dithering function includes the application of a plurality of masks. Correa discloses a system and method for processing video data for display on a display device wherein dithering is applied and the dithering function includes the application of a plurality of masks (page 9, paragraph 0038). It would have been obvious to one skilled in the art to which it

pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

22. In regards to claim 11, the combination of Lin and Mikoshiba discloses the device according to claim 8. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein said applying of said dithering function is based on single luminous elements called cells of said display device. Correa discloses a system and method for processing video data for display on a display device wherein said applying of said dithering function is based on single luminous elements called cells of said display device (page 2, paragraph 0011; page 3, paragraph 0012). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

23. In regards to claim 12, the combination of Lin and Mikoshiba discloses the device according to claim 8. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein said dithering is a 1-, 2-, 3-, and/or 4-bit dithering function. Correa discloses a system and method for processing video data for display on a display device wherein said dithering is a 1-, 2-, 3-, and/or 4-bit dithering function (page 9, paragraph 0038). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and

method which is more optimally useful in a plasma display panel to improve the quality of the display image.

24. In regards to claim 15, the combination of Lin and Mikoshiba discloses the device according to claim 8. While the combination of Lin and Mikoshiba discloses the dithering function, the combination does not specifically disclose wherein the system further includes gamma function means connected to said dithering means, so that the input signals of said dithering means are pre-corrected by a gamma function. Correa discloses a system and method for processing video data for display on a display device wherein a gamma function means is connected to said dithering means (Fig. 4, Item 10). It would have been obvious to one skilled in the art to which it pertains at the time the invention was made to integrate the teachings of Lin, Mikoshiba, and Correa in order to provide a system and method which is more optimally useful in a plasma display panel to improve the quality of the display image.

Conclusion

25. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alysa N. Brautigam whose telephone number is 571-272-7780. The examiner can normally be reached on 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Bella can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

anb

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